



EXAMINING TRITIUM COUNTER DATA



**ANALYZING SPDES WATER QUALITY
SAMPLES**

Environmental Compliance Summary

Background

The management of the WVDP is committed to operating the Project site in compliance with environmental requirements established by federal and state statutes and regulations, Executive Orders, U. S. Department of Energy Orders, and compliance agreements with federal and state regulatory agencies.

A summary of significant environmental activities at the WVDP with respect to regulatory compliance during 1989 and early 1990 is given below.

General Compliance Issues

Resource Conservation and Recovery Act (RCRA)

The WVDP has taken several steps to more effectively manage and document activities falling within the RCRA purview.

Hazardous Waste Generator Program

The WVDP fully implemented a formal hazardous waste generator program during 1989 and is maintaining compliance with all applicable New York State regulations. Four modular hazardous waste storage units complete with leak detection, alarm, and spill containment equipment were installed for interim storage of hazardous waste prior to off-site disposal by qualified waste disposal facilities.

A Hazardous Waste Generator Annual Report and a Waste Minimization Report filed with NYSDEC in February 1990 summarized 1989 hazardous waste management activities. In support of the national program to compile an inventory of each hazardous waste site the DOE owns or operates, an Inventory of Federal Hazardous Waste Activities was submitted to NYSDEC in January 1990 to meet RCRA section 3016 requirements.

Radioactive Mixed Waste Issues

Regulations addressing radioactive mixed waste (RMW) management activities became effective in New York State on May 7, 1990. The WVDP has been conducting negotiations with the state and the

Environmental Protection Agency to resolve RMW compliance issues within the context of a Federal Facilities Compliance Agreement (FFCA) and consent order. The compliance deadline for interim status facilities is June 6, 1990. A RCRA Part A Treatment and Storage permit application will be submitted by the deadline. The Project's primary objective is to treat and stabilize the large quantity of high-level RMW presently stored in underground vaults. The WVDP has emphasized active coordination with regulatory agencies on the new RMW regulations to ensure that the WVDP mission will comply with applicable RCRA regulations.

Emergency Planning and Community Right-to-Know Act (EPCRA)

An on-going inventory of hazardous and toxic substances stored at the WVDP has been maintained since October 1987. An annual report (per 40 CFR Part 370) was submitted to the local fire departments, emergency response committees, and NYSDEC in March 1990 for the 1989 reporting period. This report lists substances exceeding certain threshold quantities, amounts stored on-site, and storage locations. A toxic chemical release report for 1989 will be submitted in July 1990 to the EPA and NYSDEC, pursuant to 40 CFR Part 372.

Clean Air Act (CAA)

Assessment of Air Emissions Sources

A comprehensive WVDP plot plan detailing the location of radioactive and nonradioactive air discharge vents and other emission points was completed in September 1989 and submitted to NYSDEC in January 1990.

The 1989 assessment of hypothetical dose commitments to the public from radioactive air emissions was calculated using the Clean Air Act computer model, as well as other models, for comparison. The 1989 summary of emissions and dose commitments to meet NESHAP requirements was reported to the EPA separately in the prescribed format.

Permit Preparation

Air permit applications for four permanent tanks that hold acids and caustic substances used in plant processes were submitted to NYSDEC in 1990. Applications are being prepared for portable tanks to be used for various vitrification feed chemicals. In addition, air permit applications were submitted for the maintenance shop welding and paint booth exhaust ventilation systems.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Activities

The EPA NESHAP 40 CFR 61 revision promulgated in December 1989 provides a lower emissions standard beginning in 1990 and requires more detailed documentation of the sampling methods used to measure the releases. Evaluations of the WVDP emissions show that site airborne radioactivity releases are currently below limits incorporated in the new standards.

Clean Water Act

SPDES Issues

A number of excursions (measured effluent concentrations above the permitted levels) related to the sewage treatment plant operation occurred in 1989. The problems were almost all related to the high volume of use relative to the design capacity of the plant. Several corrective actions reduced the excursions. These included:

- Increasing the number of certified operators to eight in addition to one engineer.
- Removing solids from the equalization basin and issuing control procedures for basin operation.
- Installing a control valve to automatically shut off outfall flow if pH approaches permitted limits.
- Installing a boiler blowdown automatic pH adjustment system.
- Installing a filtration system to remove basin solids prior to discharge.

Evaluation of Sewage Treatment Plant

A review of the sewage treatment plant design and operation identified options for increasing its capacity to support the enlarged WVDP work force. A summary of the evaluation and planned actions was issued in January 1990.

The flow from the equalization basin SPDES outfall was discontinued during February 1990 and all collected fluids are being transported by licensed hauler to a permitted off-site sewage treatment plant to ensure that no excursions will occur while the appropriate modifications are being made to expand the plant capacity.

The WVDP SPDES permit (NY0000973) renewal application, which must be submitted every five years, was submitted May 16, 1990 and includes engineered modifications to increase the capacity from 10,000 to 25,000 gallons per day. Also completed were modification applications for treated effluent from the NDA solvent recovery trench and for metering of the effluent from the State Disposal Area Trench 14 treatment system into the LLWTF effluent outfall.

National Environmental Policy Act (NEPA) Activities

Phase II Environmental Impact Statement

On December 30, 1988 the Department of Energy issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) for WVDP completion and closure of the Western New York Nuclear Service Center (WNYNSC). The EIS will consider alternatives for the disposition of all facilities and waste following completion of high-level waste vitrification.

To fulfill NEPA requirements, public scoping processes, including two public hearings on February 9, 1989, were conducted to identify issues and concerns related to the proposed actions.

Following completion of the scoping process in April 1989, a draft EIS Implementation Plan was prepared. The implementation plan provides a record of the scoping process, the proposed scope of the EIS, and the important issues to be evaluated.

Site characterization studies continued throughout 1989, although progress was slowed considerably during the second half of the year because of the Tiger Team audit and efforts to control solvent migration in the NDA (see Chapter 2, Section 2.6.2 below), which together required reorganizing priorities and resources.

Characterization studies in 1989 increasingly focused on a greatly expanded investigation of West Valley's multiple solid waste management units in order to meet both NEPA and RCRA requirements for the site. By year's end a draft groundwater sampling and analysis plan had been prepared and 35 new groundwater monitoring wells had been installed.

Phase I NEPA Activities

The Phase I NEPA program experienced considerable change in 1989. The June/July Tiger Team audit identified inconsistencies between DOE headquarters and DOE Idaho operations directives, resulting in revisions to internal WVNS NEPA policies and procedures, the requirement for new, expanded NEPA documentation for ongoing operations, and a revised DOE decision-making process.

Approximately 75 environmental checklists documenting proposed WVDP actions were processed during 1989. Seven of these actions required DOE preparation of memoranda-to-file and DOE headquarters' approval prior to beginning work.

In October 1989 the Project Office requested a comprehensive analysis of all WVDP Phase I activities to determine the validity and applicability of the original site EIS prepared in 1982. The analysis, which concluded that the 1982 EIS does not require formal supplementation, was completed in early 1990.

In February 1990 DOE Secretary Watkins issued a notice (SEN-15-90) which further redirected NEPA compliance at DOE facilities. The directive, which requires "full disclosure and complete assessment," will result in substantial revision of DOE Order 5440.1C, establishment of DOE NEPA procedures, and centralization of all DOE NEPA decision-making. The full implications of these orders will not be known until FY 91, when the NEPA directive is targeted for full implementation.

Control of Radiological Releases

Water Effluents

Four batch releases of treated water of about 2.5 million gallons (9.5 million liters) each occurred in 1989. These effluents were treated liquid from the low-level waste treatment facility which receives process waste water from Project activities. The discharged liquid had been tested at two previous points after treatment to ascertain its acceptability for release and was sampled during the discharge to confirm the previous measurements. The annual average concentration of radioactivity at the point of release was 25.2% of the DOE derived concentration guides (DCGs). None of the individual releases exceeded the DCG. The effect of the releases was marginally detectable in the water collected from Cattaraugus Creek at the nearest public access point. Several other points are monitored on-site, but other than the previously identified trace radioactivity levels from pre-Project site operations, no radioactivity releases were detected. No other surface water releases, planned or unplanned, occurred in 1989 from the WVDP.

Air Effluents

Six permitted radioactive air emissions points operated in 1989 with no incident of unplanned releases. Most of the released radioactivity was from the main plant ventilation exhaust stack, followed by the supernatant treatment system ventilation. A total of 35 billion cubic feet of air was filtered and exhausted in 1989 from these two facilities alone. The overall releases from the site ventilation units were less than 0.1 % of the limits specified by Operational Safety Requirements (OSR) and were, at the point of release, less than the DCGs which are applicable at the site boundary where the general public may be exposed. Calculations to demonstrate NESHAP compliance showed 1989 doses to be less than 0.01% of the revised standard of 10 mrem, which became effective in 1990.

Radiation Exposure of the Public

The total hypothetical dose commitments from site activities in 1989 were 0.056% of the 100 mrem (1 mSv) maximum to an individual member of the public, and an aggregate total to persons within a 50 mile (80 km) radius of 0.057 person-rem (0.00057 person-Sv). These calculated doses include air, water, and all other possible exposure pathways.

Current Issues and Actions

Radioactive Mixed Waste Subject to RCRA Regulation

On March 6, 1990, the EPA published a notice in the Federal Register (55 FR 7896) which authorized NYSDEC to regulate radioactive mixed waste under New York State hazardous waste laws and to implement regulations effective May 7, 1990. In order to obtain interim status for radioactive mixed waste facilities the WVDP must submit a RCRA Part A permit application by June 6, 1990 to NYSDEC and the EPA. Relative to the above regulatory changes, the Project is negotiating a Federal Facilities Agreement with the EPA and NYSDEC, as noted above.

Site Characterization

A major effort is now under way to characterize the site to provide field measurements for the site closure EIS and for compliance with RCRA regulations. Soil characterization from borings, surface investigation, and historical data has been one focal point of activity. A companion investigation of the hydrology and water quality of the solid waste management units (SWMUs) has been the other major activity. A number of other disciplines are scheduled for investigation and documentation relative to the characterization activities. Upon completion of the characterization, each area will be described in an Environmental Information Document (EID) that will serve as a reference for EIS preparation.

Waste management

Vitrification Progress

In 1989 the successful completion of cold testing set the stage for the final construction phase of the vitrification facility. The slurry-fed ceramic melter was removed from the cold test stand and construction of the facility shield walls, transfer tunnel, and air handling structures began. The tanks and building to house the nonradioactive additives to the vitrification feed slurry are being installed to the west of the facility. Construction activity on these projects is expected to continue during 1990.

Cement Solidification

The cement solidification system (CSS) continued to operate in 1989 and 1990, encapsulating the liquid salt concentrate from the HLW supernatant treatment system in special square drums. The drums are being stored in the drum cell, which housed more than 8,000 containers as of May 1990. The CSS product has been evaluated and endorsed by the NRC as meeting the criteria for class C low-level radioactive waste disposal under 10 CFR 61. Testing has demonstrated that the product is classified as nonhazardous according to current EPA/NYSDEC hazardous waste classification criteria.

Overall Low-level Waste Management

The Project continued to effectively manage low-level radioactive waste in 1989 and 1990. The volume of waste to be stored was reduced by cutting bulky tanks and piping formerly used in the reprocessing plant into smaller pieces. This process, carried out inside a stainless steel-lined room with special ventilation, results in more easily handled and stored packaged waste.

An implementation plan for managing radioactive mixed waste was completed and issued in October 1989. The plan details the operational requisites and administrative reporting required by the regulations.

The byproduct solid wastes from the low-level waste treatment facility were characterized and bench-scale tested to obtain the best recipe mixtures for solidification. Full scale solidification demonstrations were performed on various batches of byproduct sludge to ensure that the resulting waste forms comply with DOE and NRC disposal criteria.

Chemical and Petroleum Bulk Storage Tank Program

A review of chemical and petroleum bulk storage tanks which are registered in accordance with NYSDEC requirements was completed in March 1990. The phase-in of the petroleum bulk storage requirements has been initiated as required by New York State.

Improvements in accountability for petroleum spills were made by initiating the monthly Petroleum Spill Report, which maintains a log of all minor spills to be reported to NYSDEC.

NDA Interceptor Trench

The area around the buried solvent tanks in the NDA was investigated in 1989 as a continuation of the 1988 studies. A report issued in December 1989 recommended that solvent recovery should be enhanced by intercepting the contaminant migration at the plume front.

A continuous trench 880 feet long was planned, with the first 200 feet installed in spring of 1990. Recovery and treatment methods are being tested on this section before completing the trench. An application for a modification to the site's existing SPDES permit is being sought to allow transfer of the treated water to the Project LLWTF.

Permitting Activities

- The Permit to Construct for the vitrification facility off-gas treatment system for nonradioactive testing operations was terminated after the completion of the initial "cold testing" in 1989. An application for a permit to construct the permanent off-gas treatment system is now in preparation.
- Applications for permits to modify the plant boilers in order to burn #6 fuel oil and to operate a blueprint shop exhaust and a chemistry lab hood exhaust are currently being prepared for submittal to the NYSDEC.
- The current SPDES permit expires in September 1990; the permit renewal application was submitted to NYSDEC in May 1990. The renewal request included several modifications to reflect sewage treatment plant upgrades and operational process stream changes. A modification to allow treatment of the water from the NDA solvent recovery operation was submitted in March 1990. A modification to permit the metering of treated state disposal area (SDA) effluent during LLWTF discharges is included in the 1990 renewal application.
- A RCRA Part A permit application for the treatment and storage of radioactive mixed waste will be submitted to NYSDEC in 1990.

Asbestos

The Asbestos Management Plan was issued in draft form in May 1990. Abatement work in areas designated in the Management Plan as requiring high priority is scheduled for later in 1990.

Employee training and awareness programs have been initiated, including EPA/NYS Department of Labor certified training for several WVDP asbestos workers and inspector/management planners.

Tiger Team Evaluation

From July 7 to July 28, 1989 a team of twenty-four managers and consultants selected by the Secretary of Energy investigated all areas of Project operations related to environmental surveillance, monitoring, and compliance with environmental regulations. A previously scheduled Technical Safety Appraisal was combined with the Tiger Team assessment. The team issued a combined report of their findings in August 1989, which formed the basis for follow-up actions by the Project.

The Assessment team did not identify any problems at the WVDP that present an undue risk to public or worker health or the environment. Emissions, worker exposure, and the occupational safety record compared favorably to the average for DOE facilities and the industry as a whole.

The Tiger Team Assessment report is available at the WVDP for public review.

U.S. Department of Justice Investigation

On September 21, 1990, officials of the West Valley Demonstration Project were informed that no criminal charges were warranted as a result of the U.S. Department of Justice's extensive investigation that began in July 1989.
